SPECIFIED GAS REPORTING STANDARD

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ENVIRONMENT

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1 Definitions

1(1) In this Standard,

(a) "Act" means the Climate Change and Emissions Management Act;

(b) "biomass" means plant materials, animal waste or any product made of either of these and includes without limitation wood and wood products, charcoal, agricultural residues and wastes including organic material above and below ground, both living and dead, such as trees, crops, grasses, tree litter, roots, municipal and industrial wastes where the organic material is biological in origin, landfill gas, bio-alcohols, black liquor, sludge gas, animal or plant-derived oils;

(c) "biomass emissions" means the direct emissions from the combustion of biomass;

(d) "CH_4" means methane;

(e) "CO_2" means carbon dioxide;

(f) "CO_2e" means the 100 year global warming potential of an individual specified gas expressed in terms of equivalency to CO_2 set out in the 1995 Summary for Policy Makers - A report of Working Group I of the Intergovernmental Panel on Climate Change as published by the Intergovernmental Panel on Climate Change;

(g) "direct emissions" means release of specified gases from sources actually located at a facility and does not include geologically injected CO_2;

(h) "EDR" means the secure on-line electronic data reporting system accessible at https://edrappprodb.statcan.ca/GHG;

(i) "emission factor" means the representative value that relates the rate or quantity of a specified gas released to the atmosphere with an activity associated with the release of that specified gas;

(j) "engineering estimates" means the emission estimation method from engineering principles and judgement, using knowledge of the chemical and physical processes involved, the design features of the source, or an understanding of the applicable physical and chemical laws;

(k) "flaring emissions" means direct emissions from the controlled combustion of a gas or liquid stream produced on site not for the purpose of producing energy and includes without limitation emissions arising from waste

petroleum incineration, hazardous emissions prevention systems (whether in pilot or active mode), well testing, natural gas gathering systems, processing plant operations, crude oil production, pipeline operations, petroleum refining and chemical fertilizer and steel production;

(l) "geologically injected CO_2" means CO_2 captured at a facility and injected into geological formations. Geologically injected CO_2 is not a direct emission;

(m) "global warming potential" or GWP is the relative measure of the warming effect that the emission of a specified gas might have on the Earth's atmosphere calculated as the ratio of the time-integrated radiative forcing that would result from the emission of one kilogram of a given specified gas to that from the emission of one kilogram of carbon dioxide;

(n) "HFC" means hydrofluorocarbons;

(o) "HFC Species" means CHF_3, CH_2F_2, CH_3F, $C_5H_2F_{10}$ (structure: $CF_3CHFCHFCF_2CF_3$), C_2HF_5, $C_2H_2F_4$ (structure: CHF_2CHF_2), $C_2H_2F_4$ (structure: CH_2FCF_3), $C_2H_3F_3$ (structure: CHF_2CH_2F), $C_2H_3F_3$ (structure: CF_3CH_3), $C_2H_4F_2$ (structure: CH_3CHF_2), C_3HF_7 (structure: CF_3CHFCF_3), $C_3H_2F_6$ (structure: $CF_3CH_2CF_3$) and $C_3H_3F_5$ (structure: $CH_2FCF_2CHF_2$);

(p) "industrial process emissions" means direct emissions from an industrial process involving chemical or physical reactions, other than combustion, and where the primary purpose of the industrial process is not energy production;

(q) "industrial product use emissions" means direct emissions from the use of a product that does not react in the process and includes without limitation SF_6 and HFC use as a cover gas and use of SF_6 in electrical equipment;

(r) "mass balance" means a type of emission estimation method whereby emissions are determined from the difference in the input and output of a unit operation where the accumulation and depletion of a substance are included in the calculations;

(s) "monitoring or direct measurement" means a type of emission estimation method using continuous emission monitoring systems (CEMS), predictive emission monitoring (correlations developed between measured emission rates and process parameters) or source testing such as stack sampling;

(t) "N_2O" means nitrous oxide;

(u) "on-site transportation emissions" means direct emissions resulting from fuel combustion in machinery used for the on-site transportation of products and material integral to the production process;

(v) "other fugitive emissions" means direct emissions that do not fall under stationary fuel combustion emissions, industrial process emissions, venting emissions, flaring emissions, on-site transportation emissions, or waste and wastewater emissions and includes without limitation intentional or unintentional releases of gases arising from the production, processing, transmission, storage and use of solid, liquid or gaseous fuels;

(w) "PFCs" means perfluorocarbons;

(x) "PFC species" means CF_4, C_2F_6, C_3F_8, C_4F_{10}, c-C_4F_8, C_5F_{12}, and C_6F_{14};

(y) "Regulation" means the Specified Gas Reporting Regulation;

(z) "SF_6" means sulphur hexafluoride;

(aa) "stationary fuel combustion emissions" means direct emissions resulting from non-vehicular combustion of fossil or biomass fuel for the purpose of producing energy but does not include biomass combustion CO_2 emissions;

(bb) "venting emissions" means direct emissions from intentional releases to the atmosphere of a waste gas or liquid stream and includes without limitation emissions of casing gas, associated (or solution) gas, treater, stabilizer, dehydrator off-gas, blanket gas and emissions from pneumatic devices which use natural gas as a driver, compressor start-up, pipeline and other blowdowns and metering and regulation station control loops;

and,

(cc) "waste and wastewater emissions" means direct emissions from disposal of waste and waste or wastewater treatment and includes without limitation sources of emissions from on-site waste disposal and waste or wastewater treatment at a facility such as landfilling of solid waste, flaring of landfill gas, treatment of liquid waste and waste incineration.

(2) Where this Standard uses a term defined in the Act or the Regulation, the term has the meaning set out in the Act or Regulation.

(3) Where this Standard uses a term defined in the EDR that has a meaning that is similar, the term is deemed to have the same meaning as set out in the EDR.

(4) Where this Standard uses a term defined in the EDR that has a meaning that is contradictory, the term has the meaning set out in this Standard.

2 SPECIFIED GAS REPORTING THRESHOLD

2(1) The threshold level for submission of a specified gas report is the release of 100,000 tonnes of CO_2e based on the sum of direct emissions of CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6.

(2) Biomass emissions of CO_2 shall not be included in the determination required by subsection 1.

(3) The determination of direct emissions required by subsection 1 shall be made using the following equation:

$$\textit{Total Emissions} = \sum_{i=1}^{n} (E_{CO_2 i} \times GWP_{CO_2}) + \sum_{i=1}^{n} (E_{CH_4 i} \times GWP_{CH_4}) + \sum_{i=1}^{n} (E_{N_2 Oi} \times GWP_{N_2 O}) + \sum_{v=1}^{m} (E_{PFC_v} \times GWP_{PFC_v}) + \sum_{v=1}^{m} (E_{HFC_v} \times GWP_{HFC_v}) + (E_{SF_6} \times GWP_{SF_6})$$

Where,

E_{CO2} is the direct emissions of CO_2, in the calendar year, measured in tonnes for each source category;

GWP_{CO2} is the global warming potential of CO_2: 1;

E_{CH4} is the direct emissions of CH_4 in the calendar year, measured in tonnes for each source category;

GWP_{CH4} is the global warming potential of CH_4: 21;

E_{N2O} is the direct emissions of N_2O in the calendar year, measured in tonnes for each source category;

GWP_{N2O} is the global warming potential of N_2O: 310;

E_{PFC} is the total of industrial process emissions and industrial product use emissions restricted to PFC species, in the calendar year, measured in tonnes;

GWP_{PFC} is the global warming potential of a PFC species as set out below:

Specified Gas	Formula	GWP
Perfluoromethane	CF_4	6500
Perfluoroethane	C_2F_6	9200
Perfluoropropane	C_3F_8	7000
Perfluorobutane	C_4F_{10}	7000
Perfluorocyclobutane	c-C_4F_8	8700
Perfluoropentane	C_5F_{12}	7500
Perfluorohexane	C_6F_{14}	7400

E_{HFC} is the total of industrial process emissions and industrial product use emissions restricted to HFC species, in the calendar year, measured in tonnes;

GWP_{HFC} is the global warming potential of a HFC species as set out below:

Specified Gas	Formula	GWP
HFC-23	CHF_3	11700
HFC-32	CH_2F_2	650
HFC-41	CH_3F	150
HFC-43-10mee	$C_5H_2F_{10}$ (structure: $CF_3CHFCHFCF_2CF_3$)	1300
HFC-125	C_2HF_5	2800
HFC-134	$C_2H_2F_4$ (structure: CHF_2CHF_2)	1000
HFC-134a	$C_2H_2F_4$ (structure: CH_2FCF_3)	1300
HFC-143	$C_2H_3F_3$ (structure: CHF_2CH_2F)	300
HFC-143a	$C_2H_3F_3$ (structure: CF_3CH_3)	3800
HFC-152a	$C_2H_4F_2$ (structure: CH_3CHF_2)	140
HFC-227ea	C_3HF_7 (structure: CF_3CHFCF_3)	2900
HFC-236fa	$C_3H_2F_6$ (structure: $CF_3CH_2CF_3$)	6300
HFC-245ca	$C_3H_3F_5$ (structure: $CH_2FCF_2CHF_2$)	560

E_{SF6} is the total of industrial process emissions and industrial product use emissions restricted to SF_6, in the calendar year, measured in tonnes;

GWP_{SF6} is the global warming potential of SF_6: 23900;

Where "i" is a particular source category;

Where "v" is a particular PFC or HFC species;

Where "n" is the number of source categories; and,

Where "m" is the number of species.

3 SPECIFIED GAS REPORT FILING

3(1) A specified gas reporter shall submit the specified gas report required by the Regulation to the Director by means of the EDR.

(2) A specified gas reporter shall submit the specified gas report so that it is received no later than June 1 in the year that follows the year to which the report relates.

4 SPECIFIED GAS REPORTER AND FACILITY INFORMATION

4(1) The specified gas report shall include the following information about the specified gas reporter and the specified gas reporter's facility:

(a) the specified gas reporter's legal and trade name, business number, telephone number and address;

(b) the two and four digit North American Industry Classification (NAICS) codes and the six digit NAICS Canada code for the facility;

(c) the National Pollutant Release Inventory (NPRI) identification number for the facility, if any;

(d) the facility name, where applicable and facility location;

(e) if the specified gas reporter is a subsidiary, the name, address, city of the parent company, and the percentage ownership of this subsidiary by the parent company;

(f) the name, position, address and telephone number of the public contact, if applicable;

(g) if the facility is the subject of an Environmental Protection and Enhancement Act approval or registration, the number of that approval or registration;

(h) the main sector of activity for the facility.

5 MANDATORY SPECIFIED GAS EMISSION INFORMATION

5(1) The specified gas report shall contain the following information in respect of emissions of specified gases at the specified gas reporter's facility for the previous calendar year:

(a) the amount, in tonnes, of each of the specified gases listed in column 2 of Table 1 for each direct emissions type applicable to the facility listed in column 1 of Table 1;

(b) the amount of HFCs by HFC species and PFCs by PFC species, released at the facility from industrial processes emissions and industrial product use emissions and expressed as tonnes of CO_2e;

(c) the amount of SF_6 released at the facility from industrial processes emissions and industrial product use emissions and expressed as tonnes of CO_2e;

(d) the total of the direct emissions, based on the information required by subsections (a), (b) and (c), expressed as tonnes of CO_2e, but not including biomass emissions;

(e) listing of methodology types used in calculating or determining the amounts required by subsections (a), (b) and (c) from the following:

(i) monitoring or direct measurement;

(ii) mass balance;

(iii) emission factors; or

(iv) engineering estimate.

Table 1

Column 1 - Direct Emissions Type	**Column 2 - Specified Gas Type**
Stationary Fuel Combustion Emissions	CO_2, CH_4, N_2O
Industrial Process Emissions	CO_2, CH_4, N_2O
Venting and Flaring	CO_2, CH_4, N_2O
Other Fugitive Emissions	CO_2, CH_4, N_2O
On-site Transportation Emissions	CO_2, CH_4, N_2O
Waste and Wastewater Emissions	CO_2, CH_4, N_2O
Biomass Emissions	CO_2

6 ADDITIONAL SPECIFIED GAS EMISSION INFORMATION

6(1) The specified gas report may contain the following additional information in respect of emissions of specified gases at the specified gas reporter's facility for the previous calendar year:

(a) the amount of geologically injected CO_2;

(b) the methodologies, emission factors, equations and calculations used in calculating or determining emissions;

(c) citation of methodology reference publications used in calculating or determining direct emissions;

(d) the amount, in tonnes, of indirect emissions of CO_2, CH_4 and N_2O associated with the generation of imported/purchased electricity, steam or heat for the facility;

(e) a calculation of net specified gas emissions, in tonnes, based on the direct emissions total reported pursuant to section 5(1)(d) less offsets or emission reduction equivalencies;

(f) a determination of specified gas emission intensity expressed in tonnes, and associated calculation;

and

(g) the amount, in tonnes, of biological sequestration of CO_2, which the specified gas reporter has assigned to the benefit of a facility's operations.

7 METHODOLOGY

7(1) A specified gas reporter shall calculate or determine the amount of stationary fuel combustion emissions, industrial process emissions, venting and flaring emissions, other fugitive emissions, on-site transportation emissions, waste and wastewater emissions and biomass emissions where required by sections 2 and 5 by using one or more of the applicable methodologies, emission factors, equations and calculations that is:

(a) widely accepted by the industry to which the facility belongs; or

(b) consistent with the guidelines approved for use by the United Nations Framework Convention on Climate Change (UNFCCC) for the Preparation of

National Greenhouse Gas Emission Inventories by Annex 1 Parties (I
18/CP.8), and the annex to that decision contained in FCCC/CP/2002/

8 CERTIFICATION

8(1) The submission of the report shall be accompanied by a completed statemen
certification in the following form:

STATEMENT OF CERTIFICATION

For: {Reporting Company Legal Name}
{Facility Name}
{Facility Location}

Facility ID: {Facility ID}
NPRI ID: {NPRI ID}
Environmental Protection and Enhancement Act Approval No: {EPEA Approval No}

I hereby certify that I have reviewed the report submitted, and have exercised due diligence to ensure that the submitted information is true and complete. The amounts and values (presented below) are accurate, based on reasonable estimates using available data.

SUMMARY OF THE DATA SUBMITTED

Specified Gas	*Total Tonnes*	*Total Tonnes (in CO_2e)*
Carbon dioxide	[ ] CO_2	[ ] CO_2e
Methane	[ ] CH_4	[ ] CO_2e
Nitrous oxide	[ ] NO_2	[ ] CO_2e
Hydrofluorocarbons (HFC)		[ ] CO_2e
Perfluorocarbons (PFC)		[ ] CO_2e
Sulphur hexafluoride	[ ] SF_6	[ ] CO_2e
Total Emissions		[ ] CO_2e
Carbon dioxide from biomass combustion	[ ] CO_2	[ ] CO_2e

I, _____, [Certifying Official] have the authority to bind the reporting company.

_____ _____
SIGNATURE OF CERTIFYING OFFICIAL DATE

Certifying Official
Name : {First and Last Name of certifying official}
Position/Title : {Position of certifying official}
Telephone : {(XXX) XXX-XXXX} Ext: {XXXXX} Fax: {(XXX) XXX-XXXX}
E-mail : {E-mail of certifying official}